CONTENTS

No. 1.—March

PAGE

Doll, R.—The Geographical Distribution of Cancer 1

Dixon, R. A.—Results of Treatment of Breast Cancer in South-East England . 9

Ashley, D. J. B.—A Male–Female Differential in Tumour Incidence 21

Ashley, D. J. B.—Sex Differences in the Incidence of Tumours at Various Sites. 26

Slavin, G. and Cameron, H. MacD.—Ameloblastomas in Africans from Tanzania and Uganda 31

Tennekoon, G. E. and Bartlett, G. C.—Effect of Betel Chewing on the Oral Mucosa 39

Jelliffe, A. M.—Vinblastine in the Treatment of Hodgkin's Disease. . . . 44

Gray, A. and Doniach, I.—Morphology of the Nuclei of Papillary Carcinoma of the Thyroid 49

Gad, A.—A Histochemical Study of Human Alimentary Tract Mucosubstances in Health and Disease. I Normal and Tumours 52

Gad, A.—A Histochemical Study of Human Alimentary Tract Mucosubstances in Health and Disease. II Inflammatory Conditions 64

Whitelaw, A. G. L.—Ultrastructure of an Oat Cell Carcinoma of the Bronchus Producing an Antidiuretic Hormone 69

Abdel Sayed, W., Bassily, S., Mohran, Y., Wassef, S. A. and Abdel Ghaffar, Y.—LDH Activity in Urinary Schistosomiasis and its Complications. . 73

Smith, G. M. R.—The Effect of Cytotoxic Agents on Human Tumours Transplanted to the Hamster Cheek Pouch 78

Smith, G. M. R.—A Comparison of the Effects of Cytotoxic Agents on the Walker 256 Tumour Growing in the Rat and at the Hamster Cheek Pouch . . 88

Denton, Pamela M. and Symes, M. O.—Attempts to Induce a Graft-versus-Tumour Reaction against AKR Lymphomata, in Isogenic Mice, by Injection of Melphalan and Foreign Immunologically Competent Cells 95

Pylev, L. N., Roe, F. J. C. and Warwick, G. P.—Elimination of Radioactivity after Intratracheal Instillation of Tritiated 3,4-Benzopyrene in Hamsters . 103

Postlethwaite, R., Best, P. V., Porteous, I. B. and Blair, D. W.—Growth and Regression of Rabbit Tumours Induced by Polyoma Virus 116

Le Page, R. N. and Christie, G. S.—Induction of Liver Tumours in the Rabbit by Feeding Dimethylnitrosamine 125

Stoker, T. A. M.—The Effect of Cortisone Therapy and Limb Exercise on the Dissemination of Cancer via the Lymphatic System 132

Stoker, T. A. M.—The Effect of Cortisone Therapy and Limb Exercise on the Retention of Tumour Cells by the Regional Lymph Node 136

Currie, G. A. and Bagshawe, K. D.—Tumour Specific Immunogenicity of Methylcholanthrene-Induced Sarcoma Cells after Incubation in Neuraminidase 141

Blomquist, L., Flodh, H. and Ullberg, S.—Uptake of ^{125}I-Labelled 4-Iodophenylalanine in Tumours of Mice 150

Heath, J. C., Webb, M. and Caffrey, Maeve—The Interaction of Carcinogenic Metals with Tissues and Body Fluids. Cobalt and Horse Serum . . . 153

Matsuyama, M., Suzuki, H. and Nakamura, T.—Carcinogenesis in dd/I Mice Injected During Suckling Period with Urethane, Nitrogen Mustard N-Oxide, and Nitroso-Urethane 167

Roe, F. J. C. and Carter, R. L.—Chromium Carcinogenesis: Calcium Chromate as a Potent Carcinogen for the Subcutaneous Tissues of the Rat 172

MARCH—*cont.*

PAGE

LEAVER, D. D., SWANN, P. F. AND MAGEE, P. N.—The Induction of Tumours in the Rat by a Single Oral Dose of N-Nitrosomethylurea 177
BOND, BERNICE and ORR, J. W.—The Effects of a Single Dose of 7,12-Dimethylbenz(*a*)anthracene on the Epidermis and Hair Follicles of Mice, with Notes on Concurrent Changes in the Ovaries and Adrenals 188
TANAKA, T. AND LAJTHA, L. G.—Characteristics of Murine Myeloid Leukaemia Colonies in the Spleen 197
WU, C. AND HOMBURGER, H. A.—Responsiveness of Enzymes in Liver to Growth of Novikoff Hepatoma 204
HARRAP, K. R. AND HILL, BRIDGET T.—The Selectivity of Action of Alkylating Agents and Drug Resistance. Part I: Biochemical Changes Occurring in Sensitive and Resistant Strains of the Yoshida Ascites Sarcoma Following Chemotherapy 210
HARRAP, K. R. AND HILL, BRIDGET T.—The Selectivity of Action of Alkylating Agents and Drug Resistance: Part II: A Comparison of the Effects of Alkylating Drugs on Growth Inhibition and Cell Size in Sensitive and Resistant Strains of the Yoshida Ascites Sarcoma 227
Survey of Papers i

No. 2.—JUNE

WILLIAMS, E. H., SPIT, P. AND PIKE, M. C.—Further Evidence of Space-Time Clustering of Burkitt's Lymphoma Patients in the West Nile District of Uganda 235
STASZEWSKI, J.—Smoking and Cancer of the Alimentary Tract in Poland . . 247
STOCKS, P.—Female Susceptibility to Cancer and other Diseases as Indicated by British and European Mortality Rates 254
BURKITT, D. P., WILLIAMS, E. H. AND ESHLEMAN, L.—The Contribution of the Voluntary Agency Hospital to Cancer Epidemiology 269
BRADSHAW, EVELYN AND SCHONLAND, MARY—Oesophageal and Lung Cancers in Natal African Males in Relation to Certain Socio-Economic Factors. . 275
TALERMAN, A.—Clinico-Pathological Study of Multiple Myeloma in Jamaica . 285
TOUGH, I. C. K., CARTER, D. C., FRASER, J. AND BRUCE, J.—Histological Grading in Breast Cancer 294
AHMED, N. AND COOK, PAULA—The Incidence of Cancer of the Oesophagus in West Kenya 302
ASHLEY, D. J. B.—The Two "Hit" and Multiple "Hit" Theories of Carcinogenesis 313
ATKIN, N. B. AND BAKER, MARION C.—Possible Differences Between the Karyotypes of Preinvasive Lesions and Malignant Tumours 329
TIMSON, J.—Hydroxyurea: Comparison of Cytotoxic and Antimitotic Activities Against Human Lymphocytes *in vitro* 337
ADELOYE, A. AND ODEKU, E. L.—Metastatic Neoplasms of the Brain in Nigeria 340
SLAVIN, G., CAMERON, H. McD. AND SINGH, H.—Kaposi's Sarcoma in Mainland Tanzania: A Report of 117 Cases 349
COMMINS, B. T. AND GIBBS, G. W.—Contaminating Organic Material in Asbestos 358
DAVIES, R. F. AND DAY, T. D.—A Study of the Comparative Carcinogenicity of Cigarette and Cigar Smoke Condensate on Mouse Skin 363
LEE, MAUREEN B., NIBLOCK, ROSALIE M. AND BRIDGES, J. M.—The Influence of Human Serum on the Anti-Tumour Activity of Two *L*-Asparaginases . 369
MARCHANT, JUNE—Sarcoma Induction in Mice by Methylcholanthrene . . 377
MARCHANT, JUNE—Sarcoma Induction in Mice by Methylcholanthrene . . 383

JUNE—*cont.*

PAGE

STERN, ELIZABETH AND MICKEY, M. R.—Effects of a Cyclic Steroid Contraceptive Regimen on Mammary Gland Tumor Induction in Rats 391

CARTER, R. L. AND ROE, F. J. C.—Induction of Sarcomas in Rats by Solid and Fragmented Polyethylene: Experimental Observations and Clinical Implications 401

CARTER, R. L.—Early Development of Injection-site Sarcomas in Rats: A Study of Tumours Induced by a Rubber Additive 408

TARIN, D.—Fine Structure of Murine Mammary Tumours: The Relationship Between Epithelium and Connective Tissue in Neoplasms Induced by Various Agents 417

BERENBAUM, M. C.—Dose-response Curves for Agents that Impair Cell Reproductive Integrity 426

BERENBAUM, M. C.—Dose-response Curves for Agents that Impair Cell Reproductive Integrity 434

BROWN, H. D., CHATTOPADHYAY, S. K., PATEL, A. B., SPJUT, H. J., SPRATT, J. S., PUGH, R. P. AND PENNINGTON, S. N.—Lactate Dehydrogenase Isozymes of 3 : 2′-Dimethyl-4-amino Biphenyl-induced Breast Carcinoma 446

HULSE, E. V. AND MOLE, R. H.—Skin Tumour Incidence in CBA Mice Given Fractionated Exposures to Low Energy Beta Particles 452

SURVEY OF PAPERS i

No. 3.—SEPTEMBER

HIROHATA, T. AND KURATSUNE M.—The Geographical Comparison of Mortality from Cancer of the Stomach and Ulcer of the Stomach in Japan . . . 465

PELTOKALLIO, PEKKA AND KALIMA, TIMO V.—Malignant Tumours of the Male Breast in Finland: A Report of 51 Cases 480

MODAN, B., EISENSTEIN, Z. AND VIRAG, IRIT—Thyroid Cancer in Israel . . 488

OWEN, L. N. AND STEEL, G. G.—The Growth and Cell Population Kinetics of Spontaneous Tumours in Domestic Animals 493

HODKINSON, MADELINE AND TAYLOR, G.—Autoimmune Responses to Human Tumour Antigens 510

PHILP, J. R., CROOKS, J., MACGREGOR, A. G. AND MCINTOSH, J. A. R.—The Growth Curve of the Rat Thyroid under a Goitrogenic Stimulus 515

PHILP, J. R., CROOKS, J., MACGREGOR, A. G. AND MCINTOSH, J. A. R.—The Short Term Effects of X-Radiation on Goitrogen Induced Growth of the Rat Thyroid 524

BALDWIN, R. W. AND ROMERIL, M. G.—The Metabolism of 4-Acetamidostilbene and its *N*-Hydroxy Derivative 536

WRIGHT, J. K. AND PETO, R.—An Elementary Theory Leading to Non-Linear Dose-Risk Relationships for Radiation Carcinogenesis 547

LOKE, Y. W. AND BORLAND, R.—A Histological Study of Chromatin Positive and Negative Hydatidiform Moles 554

CARTER, R. L.—Early Development of Injection-site Sarcomas in Rats: A Study of Tumours Induced by Iron-Dextran 559

WAGNER, J. C. AND BERRY, G.—Mesotheliomas in Rats Following Inoculation with Asbestos 567

BERRY, G. AND WAGNER, J. C.—The Application of a Mathematical Model Describing the Times of Occurrence of Mesotheliomas in Rats Following Inoculation with Asbestos 582

SEPTEMBER—*cont.*

PAGE

VAN DUUREN, B. L., SIVAK, A., KATZ, C. AND MELCHIONNE, S.—Tumorigenicity of Acridine Orange 587
BURKI, H. R. AND OKITA, G. T.—Effect of Oral Copper Sulfate on 7,12-Dimethylbenz(α)anthracene Carcinogenesis in Mice 591
DESSEV, G. N., MULLOCK, BARBARA M., REID, E. AND TURNER, M. K.—Ribonucleic Acid as Affected by Hepatocarcinogenesis 597
DATTA, S. P., CERINI, MILDRED, GHOSE, T. AND CERINI, J.—Effect of Phytohaemagglutinin on Ehrlich Ascites Carcinoma 616
MORI, W. AND COOMBS, R. R. A.—Demonstration, by the Mixed Antiglobulin Reaction, of Antibodies to BP8 Tumour Cells in Immunized Mice . . . 622
JONES, P. C. T.—Nucleoside Phosphate Levels in Normal and Tumour Cells and their Significance 629
DUNN, J. A., KEW, M. C., TAYLOR, J. D. AND MALLET, R. C.—Serum Zinc Levels in Hepatocellular Carcinoma 634
SHIVAS, A. A. AND GILLESPIE, W. J.—The Vascularisation of Brown-Pearce Carcinoma Implanted in Rabbit Liver 638
CRAWFORD, M. A., HANSEN, INGE L. AND LOPEZ, A.—The Excretion of 3-Hydroxyanthranilic and Quinolinic Acid in Uganda Africans 644
HERROLD, KATHERINE MCD.—Aflatoxin Induced Lesions in Syrian Hamsters . 655
SURVEY OF PAPERS i

NO. 4—DECEMBER

HEMS, G.—Lung Cancer: Smoking and Other Associated Factors 661
SCHONLAND, MARY, AND BRADSHAW, EVELYN—Upper Alimentary Tract Cancer in Natal Indians with Special Reference to the Betel-chewing Habit . 670
MILLETT, YVONNE L., BENNETT, M. H., JELLIFFE, A. M. AND FARRER-BROWN, G.—Nodular Sclerotic Lymphosarcoma. A Further Review 683
SHANTA, V. AND KRISHNAMURTHI, S.—The Aetiology of Carcinoma of the Uterine Cervix in South India: A Preliminary Report 693
HAYWARD, A. F. FICKLING B. W. AND LUCAS, R. B.—An Electron Microscope Study of a Pigmented Tumour of the Jaw of Infants 702
LAVELLE, R. J.—Metachronous Carcinoma of the Larynx Following Successful Treatment of Carcinoma of the Bronchus 709
OLUWASANMI, J. O., OLUFEMI WILLIAMS, A. AND ALLI, A. F.—Superficial Cancer in Nigeria 714
ZIEGLER, J. L., LEWIS, M. G., LUYOMBYA, J. M. S. AND KIRYABWIRE, J. W. M.—Immunologic Studies in Patients with Malignant Melanoma in Uganda . 729
GOLDBERG, D. M., MCALLISTER, R. A. AND ROY, A. D.—Proteolytic Enzymes in Adenocarcinomata of the Human Colon 735
MAXWELL ANDERSON, J. AND HUTCHISON, J.—Sequential Analysis of Constant and Prolonged Chemotherapy for Cancer of the Lung 744
BURROWS, T. W.—Chemical Carcinogenesis 751
MUGERA, G. M.—Induction of Kidney Tumours in the Rats by Feeding *Encephalartos hildebrandtii* for Short Periods 755
SCHOENTAL, R. AND BENSTED, J. P. M.—Gastro-intestinal Tumours in Rats and Mice Following Various Routes of Administration of *N*-Methyl-*N*-Nitroso-*N'*-Nitroguanidine and *N*-Ethyl-*N*-Nitroso-*N'*-Nitroguanidine 757
VAN ESCH, G. J. AND KROES, R.—The Induction of Renal Tumours by Feeding Basic Lead Acetate to Mice and Hamsters 765

DECEMBER—*cont.*

PAGE

DZHIOEV, F. K., WOOD, M., COWEN, D. M., CAMPOBASSO, O. AND CLAYSON, D. B.—Further Investigations on the Proliferative Response of Mouse Bladder Epithelium to 4-Ethylsulphonylnaphthalene-1-Sulphonamide . . . 772

POLLIACK, A., CHARUZY, I. AND LEVIJ, I. S.—The Effect of Oestrogen on 9,10-Dimethyl-1,2-Benzanthracene (DMBA)-induced Cheek Pouch Carcinoma in Castrated and Non-castrated Male Syrian Golden Hamsters 781

GRASSO, P., GANGOLLI, S. D. AND HOOSON, JEAN—Connective Tissue Response to a Short-term Series of Subcutaneous Injections of Sorbic Acid or Aflatoxin. Physico-chemical Factors Determining Reaction to Sorbic Acid . . 787

PURCHASE, I. F. H. AND STEYN, M.—The Metabolism of Aflatoxin B_1 in Rats . 800

FIELDSTEEL, A. H., DAWSON, P. J. AND KURAHARA, C.—Induction of Lymphatic Leukaemia in BALB/c Mice from the Original Isolate of Rauscher Virus . 806

MATHÉ, G., POUILLART, P. AND LAPEYRAQUE, FRANÇOISE—Active Immunotherapy of L1210 Leukaemia Applied After the Graft of Tumour Cells . 814

SHORTRIDGE, D., TURNER, R. AND (THE LATE) GREEN, H. N.—The Action of Aminobenzacridines on the Furth Rat Leukaemia 825

DONIACH, I. AND SWETTENHAM, K. V.—Goitrogenic Response at Sequential Time Intervals After 250 and 500 Rads X-rays to the Rat Thyroid 833

WHITEHEAD, J. K. AND ROTHWELL, K.—The Mouse Skin Carcinogenicity of Cigarette Smoke Condensate: Fractionated by Solvent Partition Methods 840

DAVIES, R. F.—Tumorigenicity of Very Fresh Tobacco Smoke Condensate to Mouse Skin 858

DANIEL, MARY R.—The Effect of Malignant Dermal Cells on Embryonic Epidermis *in vitro* 861

CHANG, L. O., MORRIS, H. P. AND LOONEY, W. B.—The Modification of Labeled Cytidine and Thymidine Incorporation into Mitochondrial and Nuclear DNA in Normal Liver, Hepatoma 3924A and its Host Liver by Isoproterenol 868

BLAIR, D. G. R. AND HALL, A. D.—Specific Activities of Uridine Phosphorylase and Uridine Kinase in Ehrlich Ascites Carcinoma Cells and 6-Azauracil- and 6-Azauridine-treated Sublines in Successive Transplant Generations . 875

SURVEY OF PAPERS i

INDEX TO AUTHORS

ADELOYE, A. and ODEKU, E. L., metastatic neoplasms of the brain in Nigeria, 340.

AHMED, N. and COOK, P., the incidence of cancer of the oesophagus in West Kenya, 302.

ALLI, A. F., see *Oluwasanmi, J. O.*

ANDERSON, J. M. and HUTCHISON, J., sequential analysis of constant and prolonged regional chemotherapy for cancer of the lung, 744.

ASHLEY, D. J. B., a male–female differential in tumour incidence, 21.

——, sex differences in the incidence of tumours at various sites, 26.

——, the two "hit" and multiple "hit" theories of carcinogenesis, 313.

ATKIN, N. B. and BAKER, M. C., possible differences between the karyotypes of preinvasive lesions and malignant tumours, 329.

BAGSHAWE, K. D., see *Currie, G. A.*

BAKER, M. C., see *Atkin, N. B.*

BALDWIN, R. W. and ROMERIL, M. G., the metabolism of 4-acetamidostilbene and its *N*-hydroxy derivative, 536.

BARTLETT, G. C., see *Tennekoon, G. E.*

BASSILY, S., see *Sayed, A. W.*

BENNETT, M. H., see *Millett, Y. L.*

BENSTED, J. P. M., see *Schoental, R.*

BERENBAUM, M. C., dose-response curves for agents that impair cell reproductive integrity, 426.

——, dose-response curves for agents that impair cell reproductive integrity, 434.

BERRY, G. and WAGNER, J. C., the application of a mathematical model describing the times of occurrence of mesotheliomas in rats following inoculation with asbestos, 582.

——, see *Wagner, J. C.*

BEST, P. V., see *Postlethwaite, R.*

BLAIR, D. G. R. and HALL, A. D., specific activities of uridine phosphorylase and uridine kinase in Ehrlich ascites carcinoma cells and 6-azauracil- and 6-azauridine-treated sublines in successive transplant generations, 875.

——, see *Postlethwaite, R.*

BLOMQUIST, L., FLODH, H. and ULLBERG, S., uptake of ^{125}I-labelled 4-iodophenylalanine in tumours of mice, 150.

BOND, B. and ORR, J. W., the effects of a single dose of 7,12-dimethylbenz(*a*)anthracene on the epidermis and hair follicles of mice, with notes on concurrent changes in the ovaries and adrenals, 188.

BORLAND, R., see *Loke, Y. W.*

BRADSHAW, E. and SCHONLAND, M., oesophageal and lung cancers in Natal African Males in relation to certain socio-economic factors, 275.

——, see *Schonland, M.*

BRIDGES, J. M., see *Lee, M. B.*

BROWN, H. D., CHATTOPADHYAY, S. K., PATEL, A. B., SPJUT, H. J., SPRATT, J. S., PUGH, R. P. and PENNINGTON, S. N., lactate dehydrogenase isozymes of 3:2′-dimethyl-4-amino biphenyl-induced breast carcinoma, 446.

BRUCE, J., see *Tough, I. C. K.*

BURKI, H. R. and OKITA, G. T., effect of oral copper sulfate on 7,12-dimethylbenz(*a*)anthracene carcinogenesis in mice, 591.

BURKITT, D. P., WILLIAMS, E. H. and ESHLEMAN, L., the contribution of the voluntary agency hospital to cancer epidemiology, 269.

BURROWS, T. W., chemical carcinogenesis, 751.

CAFFREY, M., see *Heath, J. C.*

CAMERON, H. MACD., see *Slavin, G.*

CAMPOBASSO, O., see *Dzhioev, F. K.*

CARTER, D. C., see *Tough, I. C. K.*

CARTER, R. L., early development of injection-site sarcomas in rats: a study of tumours induced by a rubber additive, 408.

——, early development of injection-site sarcomas in rats: a study of tumours induced by iron-dextran, 559.

—— and ROE, F. J. C., induction of sarcomas in rats by solid and fragmented polyethylene: experimental observations and clinical implications, 401.

——, see *Roe, F. J. C.*

CERINI, J., see *Datta, S. P.*

CERINI, M., see *Datta, S. P.*

CHANG, L. O., MORRIS, H. P. and LOONEY, W. B., the modification of labeled cytidine and thymidine incorporation into mitochondrial and nuclear DNA in normal liver, hepatoma 3924A and its host liver by isoproterenol, 868.
CHARUZY, I., see *Polliack, A.*
CHATTOPADHYAY, S. K., see *Brown, H. D.*
CHRISTIE, G. S., see *Le Page, R. N.*
CLAYSON, D. B., see *Dzhioev, F. K.*
COMMINS, B. T. and GIBBS, G. W., contaminating organic material in asbestos, 358.
COOK, P., see *Ahmed, N.*
COOMBS, R. R. A., see *Mori, W.*
COWEN, D. M., see *Dzhioev, F. K.*
CRAWFORD, M. A., HANSEN, I. L. and LOPEZ, A., the excretion of 3-hydroxyanthranilic and quinolinic acid in Uganda Africans, 644.
CROOKS, J. see *Philp, J. R.*
CURRIE, G. A. and BAGSHAWE, K. D., tumour specific immunogenicity of methylcholanthrene-induced sarcoma cells after incubation in neuraminidase, 141.

DANIEL, M. R., the effect of malignant dermal cells on embryonic epidermis *in vitro*, 861.
DATTA, S. P., CERINI, M., GHOSE, T. and CERINI, J., effect of phytohaemagglutinin on Ehlich ascites carcinoma, 616.
DAVIES, R. F., tumorigenicity of very fresh tobacco smoke condensate to mouse skin, 858.
—— and DAY, T. D., a study of the comparative carcinogenicity of cigarette and cigar smoke condensate on mouse skin, 363.
DAWSON, P. J., see *Fieldsteel, A. H.*
DAY, T. D., see *Davies, R. F.*
DENTON, P. M. and SYMES, M. O., attempts to induce a graft-versus-tumour reaction against AKR lymphomata, in isogenic mice, by injection of Melphalan and foreign immunologically competent cells, 95.
DESSEV, G. N., MULLOCK, B. M., REID, E. and TURNER, M. K., ribonucleic acid as affected by hepatocarcinogenesis, 597.
DIXON, R. A., results of treatment of breast cancer in South-East England, 9.
DOLL, R., the geographical distribution of cancer, 1.
DONIACH, I. and SWETTENHAM, K. V., goitrogenic response at sequential time intervals after 250 and 500 rads X-rays to the rat thyroid, 833.
——, see *Gray, A.*
DUNN, J. A., KEW, M. C., TAYLOR, J. D. and MALLETT, R. C., serum zinc levels in hepatocellular carcinoma, 634.
DZHIOEV, F. K., WOOD, M., COWEN, D. M., CAMPOBASSO, O. and CLAYSON, D. B., further investigations on the proliferative response of mouse bladder epithelium to 4-ethylsulphonylnaphthalene-1-sulphonamide, 772.

EISENSTEIN, Z., see *Modan, B.*
ESHLEMAN, L., see *Burkitt, D. P.*

FARRER-BROWN, G., see *Millett, Y. L.*
FICKLING, B. W., see *Hayward, A. F.*
FIELDSTEEL, A. H., DAWSON, P. J. and KURAHARA, C., the induction of lymphatic leukaemia in BALB/c mice from the original isolate of Rauscher virus, 806.
FLODH, H., see *Blomquist, L.*
FRASER, J., see *Tough, I. C. K.*

GAD, A., a histochemical study of human alimentary tract mucosubstances in health and disease. I. Normal and tumours, 52.
——, a histochemical study of human alimentary tract mucosubstances in health and disease. II. Inflammatory conditions, 64.
GANGOLLI, S. D., see *Grasso, P.*
GHAFFAR, A. Y., see *Sayed, A. W.*
GHOSE, T., see *Datta, S. P.*
GIBBS, G. W., see *Commins, B. T.*
GILLESPIE, W. J., see *Shivas, A. A.*
GOLDBERG, D. M., MCALLISTER, R. A. and ROY, A. D., proteolytic enzymes in adenocarcinomata of the human colon, 735.
GRASSO, P., GANGOLLI, S. D. and HOOSON, J., connective tissue response to a short-term series of subcutaneous injections of sorbic acid or aflatoxin, 787.
GRAY, A. and DONIACH, I., morphology of the nuclei of papillary carcinoma of the thyroid, 49.
GREEN, H. N., see *Shortridge, D.*

HALL, A. D., see *Blair, D. G. R.*
HANSEN, I. L., see *Crawford, M. A.*
HARRAP, K. R. and HILL, B. T., the selectivity of action of alkylating agents and drug resistance. Part I, 210.
——, ——, the selectivity of action of alkylating agents and drug resistance. Part II, 227.
HAYWARD, A. F., FICKLING, B. W. and LUCAS, R. B., an electron microscope study of a pigmented tumour of the jaw of infants, 702.
HEATH, J. C., WEBB, M. and CAFFREY, M., the interaction of carcinogenic metals with tissues and body fluids. Cobalt and horse serum, 153.

HEMS, G., lung cancer: smoking and other associated factors, 661.
HERBOLD, K. McD., aflatoxin induced lesions in Syrian hamsters, 655.
HILL, B. T., see *Harrap, K. R.*
HIROHATA, T. and KURATSUNE, M., the geographical comparison of mortality from cancer of the stomach and ulcer of the stomach in Japan, 465.
HODKINSON, M. and TAYLOR, G., autoimmune responses to human tumour antigens, 510.
HOMBURGER, H. A., see *Wu, C.*
HOOSON, J., see *Grasso, P.*
HULSE, E. V. and MOLE, R. H., skin tumour incidence in CBA mice given fractionated exposures to low energy beta particles, 452.
HUTCHISON, J., see *Anderson, J. M.*

JELLIFFE, A. M., Vinblastine in the treatment of Hodgkin's disease, 44.
——, see *Millett, Y. L.*
JONES, P. C. T., nucleoside phosphate levels in normal and tumour cells and their significance, 629.

KALIMA, T. V., see *Peltokallio, P.*
KATZ, C., see *Van Duuren, B. L.*
KEW, M. C., see *Dunn, J. A.*
KIRYABWIRE, J. W. M., see *Ziegler, J. L.*
KRISHNAMURTHI, S., see *Shanta, V.*
KROES, R., see *Van Esch, G. J.*
KURAHARA, C., see *Fieldsteel, A. H.*
KURATSUNE, M., see *Hirohata, T.*

LAJTHA, L. G., see *Tanaka, T.*
LAPEYRAQUE, F., see *Mathé, G.*
LAVELLE, R. J., metachronous carcinoma of the larynx following successful treatment of carcinoma of the bronchus, 709.
LEAVER, D. D., SWANN, P. F. and MAGEE, P. N., the induction of tumours in the rat by a single oral dose of N-nitrosomethylurea, 177.
LEE, M. B., NIBLOCK, R. M. and BRIDGES, J. M., the influence of human serum on the anti-tumour activity of two *l*-asparaginases, 369.
LE PAGE, R. N. and CHRISTIE, G. S., induction of liver tumours in the rabbit by feeding dimethylnitrosamine, 125.
LEVIJ, I. S., see *Polliack, A.*
LEWIS, M. G., see *Ziegler, J. L.*
LOKE, Y. W. and BORLAND, R., a histological study of chromatin positive and negative hydatidiform moles, 554.
LOONEY, W. B., see *Chang, L. O.*
LOPEZ, A., see *Crawford, M. A.*
LUCAS, R. B., see *Hayward, A. F.*
LUYOMBYA, J. M. S., see *Ziegler, J. L.*

MCALLISTER, R. A., see *Goldberg, D. M.*
MACGREGOR, A. G., see *Philp, J. R.*
MCINTOSH, J. A. R., see *Philp, J. R.*
MAGEE, P. N., see *Leaver, D. D.*
MALLET, R. C., see *Dunn, J. A.*
MARCHANT, J., sarcoma induction in mice by methylcholanthrene, 377.
——, sarcoma induction in mice by methylcholanthrene, 383.
MATHÉ, G., POUILLART, P. and LAPEYRAQUE, F., active immunotherapy of L1210 leukaemia applied after the graft of tumour cells, 814.
MATSUYAMA, M., SUZUKI, H. and NAKAMURA, T., carcinogenesis in dd/I mice injected during suckling period with urethane, nitrogen mustard N-oxide, and nitrosourethane, 167.
MELCHIONNE, S., see *Van Duuren, B. L.*
MICKEY, M. R., see *Stern, E.*
MILLETT, Y. L., BENNETT, M. H., JELLIFFE, A. M. and FARRER-BROWN, G., nodular sclerotic lymphosarcoma. A further review, 683.
MODAN, B., EISENSTEIN, Z. and VIRAG, I., thyroid cancer in Israel, 488.
MOHRAN, Y., see *Sayed, A. W.*
MOLE, R. H., see *Hulse, E. V.*
MORI, W. and COOMBS, R. R. A., demonstration, by the mixed antiglobulin reaction, of antibodies to BP8 tumour cells in immunized mice, 622.
MORRIS, H. P., see *Chang, L. O.*
MUGERA, G. M., induction of kidney tumours in the rats by feeding *Encephalartos hildebrandtii* for short periods, 755.
MULLOCK, B. M., see *Dessev, G. N.*

NAKAMURA, T., see *Matsuyama, M.*
NIBLOCK, R. M., see *Lee, M. B.*

ODEKU, E. L., see *Adeloye, A.*
OKITA, G. T., see *Burki, H. R.*
OLUWASANMI, J. O., WILLIAMS, A. O. and ALLI, A. F., superficial cancer in Nigeria, 714
ORR, J. W., see *Bond, B.*
OWEN, L. N. and STEEL, G. G., the growth and cell population kinetics of spontaneous tumours in domestic animals, 493.

PATEL, A. B., see *Brown, H. D.*
PELTOKALLIO, P. and KALIMA, T. V., malignant tumours of the male breast in Finland: a report of 51 cases, 480.
PENNINGTON, S. N., see *Brown, H. D.*

PETO, R., see *Wright, J. K.*
PHILP, J. R., CROOKS, J., MACGREGOR, A. G. and MCINTOSH, J. A. R., the growth curve of the rat thyroid under a goitrogenic stimulus, 515.
——, ——, ——, ——, the short term effects of X-radiation on goitrogen induced growth of the rat thyroid, 524.
PIKE, M. C., see *Williams, E. H.*
POLLIACK, A., CHARUZY, I. and LEVIJ, I. S., the effect of oestrogen on 9,12-dimethyl-1,2-benzanthracene (DMBA)-induced cheek pouch carcinoma in castrated and non-castrated male Syrian golden hamsters, 781.
PORTEOUS, I. B., see *Postlethwaite, R.*
POSTLETHWAITE, R., BEST, P. V., PORTEOUS, I. B. and BLAIR, D. W., growth and regression of rabbit tumours induced by polyoma virus, 116.
PUGH, R. P., *Brown, H. D.*
POUILLART, P., see *Mathé, G.*
PURCHASE, I. F. H., and STEYN, M., the metabolism of aflatoxin B_1 in rats, 800.
PYLEV, L. N., ROE, F. J. C. and WARWICK, G. P., elimination of radioactivity after intratracheal instillation of tritiated 3,4-benzopyrene in hamsters, 103.

REID, E., see *Dessev, G. N.*
ROE, F. J. C. and CARTER, R. L., chromium carcinogenesis: calcium chromate as a potent carcinogen for the subcutaneous tissues of the rat, 172.
——, see *Carter, R. L.*
——, see *Pylev, L. N.*
ROMERIL, M. G., see *Baldwin, R. W.*
ROTHWELL, K., see *Whitehead, J. K.*
ROY, A. D., see *Goldberg, D. M.*

SAYED, A. W., BASSILY, S., MOHRAN, Y., WASSEF, S. A. and GHAFFAR, A. Y., LDH activity in urinary schistosomiasis and its complications, 73.
SCHOENTAL, R. and BENSTED, J. P. M., gastro-intestinal tumours in rats and mice following various routes of administration of *N*-methyl-*N*-nitroso-*N'*-nitroguanidine and *N*-ethyl-*N*-nitroso-*N'* nitroguanidine, 757.
SCHONLAND, M. and BRADSHAW, E., upper alimentary tract cancer in Natal Indians with special reference to the betel-chewing habit, 670.
——, see *Bradshaw, E.*
SHANTA, V. and KRISHNAMURTHI, S., the aetiology of carcinoma of the uterine cervix in South India: a preliminary report, 693.
SHIVAS, A. A. and GILLESPIE, W. J., the vascularisation of Brown-Pearce carcinoma implanted in rabbit liver, 638.
SHORTRIDGE, D., TURNER, R. and GREEN, H. N., the action of aminobenzacridines on the Furth rat leukaemia, 825.
SINGH, H., see *Slavin, G.*
SIVAK, A., see *Van Duuren, B. L.*
SLAVIN, G. and CAMERON, H. MacD., ameloblastomas in Africans from Tanzania and Uganda, 31.
——, ——, and SINGH, H., Kaposi's sarcoma in mainland Tanzania: a report of 117 cases, 349.
SMITH, G. M. R., the effect of cytotoxic agents on human tumours transplanted to the hamster cheek pouch, 78.
——, a comparison of the effects of cytotoxic agents on the Walker 256 tumour growing in the rat and at the hamster cheek pouch, 88.
SPIT, P., see *Williams, E. H.*
SPJUT, H. J., see *Brown, H. D.*
SPRATT, J. S., see *Brown, H. D.*
STASZEWSKI, J., smoking and cancer of the alimentary tract in Poland, 247.
STEEL, G. G., see *Owen, L. N.*
STERN, E. and MICKEY, M. R., effects of a cyclic steroid contraceptive regimen on mammary gland tumor induction in rats, 391.
STEYN, M., see *Purchase, I. F. H.*
STOCKS, P., female susceptibility to cancer and other diseases as indicated by British and European mortality rates, 254.
STOKER, T. A. M., the effect of cortisone therapy and limb exercise on the dissemination of cancer via the lymphatic system, 132.
——, the effect of cortisone therapy and limb exercise on the retention of tumour cells by the regional lymph node, 136.
SUZUKI, H., see *Matsuyama, M.*
SWANN, P. F., see *Leaver, D. D.*
SWETTENHAM, K. V., see *Doniach, I.*
SYMES, M. O., see *Denton, P. M.*

TALERMAN, A., clinico-pathological study of multiple myeloma in Jamaica, 285.
TANAKA, T. and LAJTHA, L. G., characteristics of murine myeloid leukaemia colonies in the spleen, 197.
TARIN, D., fine structure of murine mammary tumours, 417.
TAYLOR, G., see *Hodkinson, M.*
TAYLOR, J. D., see *Dunn, J. A.*
TENNEKOON, G. E. and BARTLETT, G. C., effect of betal chewing on the oral mucosa, 39.
TIMSON, J., hydroxyurea, 337.

TOUGH, I. C. K., CARTER, D. C., FRASER, J. and BRUCE, J., histological grading in breast cancer, 294.
TURNER, M. K., see *Dessev, G. N.*
TURNER, R., see *Shortridge, D.*

ULLBERG, S., see *Blomquist, L.*

VAN DUUREN, B. L., SIVAK, A., KATZ, C. and MELCHIONNE, S., tumorigenicity of acridine orange, 587.
VAN ESCH, G. J. and KROES, R., the induction of renal tumours by feeding basic lead acetate to mice and hamsters, 765.
VIRAG, I., see *Modan, B.*

WAGNER, J. C. and BERRY, G., mesotheliomas in rats following inoculation with asbestos, 567.
——, see *Berry, G.*
WARWICK, G. P., see *Pylev, L. N.*
WASSEF, S. A., see *Sayed, A. W.*
WEBB, M., see *Heath, J. C.*
WHITEHEAD, J. K. and ROTHWELL, K., the mouse skin carcinogenicity of cigarette smoke condensate: fractionated by solvent partition methods, 840.
WHITELAW, A. G. L., ultrastructure of an oat cell carcinoma of the bronchus producing an antidiuretic hormone, 69.
WILLIAMS, A. O., see *Oluwasanmi, J. O.*
WILLIAMS, E. H., SPIT, P. and PIKE, M. C., further evidence of space-time clustering of Burkitt's lymphoma patients in the West Nile district of Uganda, 235.
——, see *Burkitt, D. P.*
WOOD, M., see *Dzhioev, F. K.*
WRIGHT, J. K. and PETO, R., an elementary theory leading to non-linear dose-risk relationships for radiation carcinogenesis, 547.
WU, C. and HOMBURGER, H. A., responsiveness of enzymes in liver to growth of Novikoff hepatoma, 204.

ZIEGLER, J. L., LEWIS, M. G., LUYOMBYA, J. M. S. and KIRYABWIRE, J. W. M., immunologic studies in patients with malignant melanoma in Uganda, 729.